

REMARKS

Applicants thank the Examiner for the consideration given the present application. Claims 1-9 are currently pending. Claims 1-7 have been amended and claims 8 and 9 have been added through this reply. Claims 1-4 are independent. Applicants respectfully request reconsideration of the rejected claims in light of the amendment and remarks presented herein, and earnestly seek timely allowance of all pending claims.

The Claims Define Patentable Subject Matter

The Office Action rejects claims 1, 2 and 5-7 under 35 U.S.C. § 102(e) over U.S. Patent Application Publication No. 2004/054787 to Hughes et al. (Hughes); and rejects claims 1-7 under 35 U.S.C. § 103(a) over Japanese Patent Publication No. 2003-097898 to Shibata et al. (Shibata) in view of Japanese Patent Publication No. 09-072683 to Tatsumi. These rejections are respectfully traversed.

Independent claim 1 recites, *inter alia*, “an inlet part of the water passage in communication with an outermost part of the refrigerant passage having water of a predetermined temperature or less is provided with a heat transfer enhancer and rest of the water passage is devoid of a heat transfer enhancer.” Independent claims 2-4 recite similar subject matter. The applied references fail to teach or suggest the recited features of independent claims 1-4.

Hughes discloses a heat exchanger which includes a pair of spaced, cylindrical, tubular headers (10) and (12), which are generally parallel to one another. The water tubes (14) extend between the headers (10) and (12) and are in fluid communication with the interior thereof. See Fig. 1 and paragraph [0031] of Hughes. The inner wall of water tubes (14) may be provided with a conventional heat transfer enhancement in the form of multiple small grooves (52) formed on the interior of the tube wall. See Fig. 4 and paragraph [0038]. The grooves appear to form on substantially the entire tube wall. The grooves are not limited to only the inlet part of the water

passage in communication with the outermost part of the refrigerant passage. Shibata and Tatsumi fail to cure the deficiencies of Hughes.

Shibata, discloses a heat exchanger with a water passage in the periphery side of a whorl in a core tube. See paragraph [0014] of Shibata. The heat exchanger is constituted of a winding tube (2) which is spirally twisted around the periphery of a core tube (1) and a refrigerant passage (R). See paragraph [0007]. The Office Action acknowledges that Shibata fails to disclose inlet part of the water passage being provided with a heat transfer enhancer. However, the Office Action alleges that Tatsumi cures the deficiencies of Shibata. See page 3 of the Office Action.

Tatsumi discloses a heat transfer tube (7) that has spiral grooves (5) on the inner wall surface of the heat transfer tube. See Figs. 1, 3 and 5 and abstract of Tatsumi. However, the spiral grooves are present on substantially the entire inner wall surface of the heat transfer tube (7). Thus, no portion of the water passage appears devoid of a heat transfer enhancer. Hughes fails to cure the deficiencies of Shibata and Tatsumi. Accordingly, the applied references, alone or in any combination, fail to teach or suggest the recited features of independent claims 1-4.

For at least the reasons stated above, independent claims 1-4 are patentably distinct from the applied references. The dependent claims are at least allowable by virtue of their dependence on corresponding allowable independent claims 1-4.

Accordingly, withdrawal of the rejections of the claims based on the applied references is respectfully requested.

New Claims 8 and 9 are Patentable

New claims 8 and 9 are added. New claims 8 and 9 are patentable at least due to their dependence on allowable independent claim 1 and the additional features they recite.

Conclusion

In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Obert H. Chu, Reg. No. 52,744, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§ 1.16 or 1.14; particularly, extension of time fees.

Dated: May 23, 2008

Respectfully submitted,



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